CONTROL OF BEAVER DAMAGE

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INTRODUCTION

Beaver activity often conflicts with human's interests when damage occurs. It also has significant impact on the ecology of an area modified extensively by constant flooding. This often makes control of these animals somewhat different than for some other vertebrate species which cause serious damage. However, even though in biological terms beaver control may seem rather simple, in reality other factors including social, economic, and political pressures often dictate our actions more than dealing with the biological parameters of the species.

One objective of wildlife management, to protect habitat, other wildlife and other resources from damage caused by irrupting populations of any species is poorly understood by many people with wildlife training. Not only this aspect, but others associated with wildlife management are even less understood by the majority of the public. There is a serious lack of understanding by the public of the biology, population dynamics, carrying capacities, and habitat requirements of most wild vertebrate species. As indicated by various surveys, there is a public tendency to equate common and abundant vertebrate species causing damage with those which are rare, threatened, or endangered.

Much of this misconception has been caused by the concentration of media exposure on the threatened and endangered species to stimulate support and sensitize the public. However, equally, if not more important, is the demographic and geographic realities of our populace and where they live. The 1980 Agricultural Census (USDA 1981) indicated that only 2.7 percent of the people in the United States live on farms. For the most part, the other 97.3 percent of our population have no apparent reason to be supportive of landowners controlling pest species, or of wildlife management programs which deal with damage control. They have no monetary investment, no labor, no pride and no interest (Miller 1982) in a flooded agricultural or timber crop, or even where domestic animals are being killed or there is a human health hazard caused by vertebrate pests. They are, however, generally incensed to find out that the landowner/managers would trap, kill or otherwise remove that beaver population (or other cuddly creatures) from their land because the beaver is a conservationist and only does good things. They know this is true because they saw it on television or they read it in some conservation organization magazine. Their sense of protectionism for wildlife is stimulated, but their "ox has not really been gored" (Miller 1981) until they face a wildlife damage problem themselves, whether it is a snake in the house, a raccoon in the chimney, a beaver destroying the trees around their lake property, or a blackbird roost in their backyard. Their attitude about some wildlife species takes on a different perspective when this happens.

BEAVER HABITAT AND BIOLOGY

Beaver are found throughout North America, except for the arctic tundra, most of peninsular Florida, and the arid desert areas. Habitat for beaver is almost any place there is a year-round source of water, e.g., streams, lakes, farm ponds, swamps and wetland areas. It is not uncommon to find them in water supply reservoirs, highway roadside ditches, drainage ditches, canals, mine pits, oxbows, railroad dumps, drains from sewage disposal ponds and below natural springs or artesian wells. In areas beaver move into, they seem to be stimulated by running water and will quickly begin building dams which modifies the environment more to their liking. The flooding of growing timber, even if not cut down or girdled, will cause it to die and aquatic vegetation soon begins growing. Other pioneer species, e.g., willow, sweetgum, alders and buttonbush soon are growing around the edge of the flooded area adding to the available food supply. The beaver thus helps create its own habitat.

Beaver have preferences for certain trees and woody species depending on availability, such as populus species, e.g., aspen and cottonwood, plus willow, sweetgum, blackgum, and pine. However, they can and will eat the leaves, twigs and bark of most species of woody plants which grow near the water, as well as a wide variety of herbaceous and aquatic plants. They will often travel 100 yards or more from the pond or stream to get to corn fields, soybean fields and other growing crops, where they generally cut the plant off at the ground and drag the entire plant back to the water with them. Adding insult to injury, not only do they eat part of these plants, they often use the remainder as construction material in the dam.

The beaver is unparalleled at dam building and can build dams on fast-moving streams as well as slow-moving ones. They also build lodges and bank dens depending on the situation. All lodges and bank dens have at least two entrances and may have up to four. The lodge or bank den is used primarily for raising young, sleeping and some food storage during severe weather.

The length or height of a dam is generally dependent on what is necessary to essentially stop the flow of water and create a pond. In areas of flat topography, the dam may not be over 36" high, but as much as $\frac{1}{4}$ mile long, whereas in rolling hills or mountain country, the dam may be 10' high and only 50' long. The size of the tree the beaver cuts is highly variable, from a one-inch DBH pine to a six foot DBH cottonwood. (DBH means diameter breast height.) In some areas they seem to cut down trees to about 10" DBH and merely girdle or partially cut those larger, although they will cut down much larger trees.

An important factor about beaver biology is their territoriality. The colony generally consists of four to eight related beaver, and they resist additions or outsiders to the colony or the pond. Young beaver at the two years-of-age status are commonly displaced from the colony shortly after they become sexually mature. They often move to another area and begin a new pond and colony; however, some become solitary hermits inhabiting old, otherwise abandoned ponds, or often, if available, moving to a farm pond.

Beaver have a few natural predators aside from humans, including coyote, bobcat, alligator, river otter and even mink on young kittens, and in others areas, bear, wolves, and wolverines may prey on beaver. They are hosts for several ectoparasites and internal parasites including nematodes, trematodes and coccidians from the feces. *Giardia lamblia* is one of the pathogenic intestinal parasites transmitted by beaver which has caused human health problems in water supply systems in the northeast and northwestern United States. In fact, the Centers for Disease Control (1982) have reports of at least 41 waterborne Giardiasis outbreaks affecting more than 15,000 persons. For more information about Giardiasis, see von Oettingen (1982), M.S. Thesis, which contains a number of references.

DAMAGE/DAMAGE IDENTIFICATION

Most of the damage caused by beaver is a result of dam building, bank burrowing, tree cutting or flooding. Some individual southeastern States where beaver damage is extensive have determined from surveys that beaver damage estimates range from $3 to $8 million dollars annually to timber loss, crop losses, roads, dwellings, property flooded, and other damage. In some of these States, bottomland hardwood timber in areas of several thousand acres in one watershed may be lost because of beaver pond flooding. Some unusual cases observed over the years include State highways flooded because of beaver ponds, reservoir dams destroyed by bank den burrows collapsing, train derailments caused by burrowing, housing developments threatened by beaver dam flooding, and thousands of acres of croplands and young pine plantations flooded by beaver. These dams flood roads and plug up ditches, drain pipes and culverts so thoroughly that they often have to be dynamited out and replaced. Some burrowing and digging around bridges has resulted in extensive bridge repair or replacement.

The most unusual and difficult to explain was the beaver-cut tree by a highway bridge that, when felled, dropped across the hood of a family's automobile traveling down the highway. The damage caused by beaver is not only economically significant, it is also very frustrating to landowners and others.

The identification of beaver damage is generally not a problem with dams, stopped up culverts, bridges, or drain pipes resulting in flooded lands, timber, roads, crops, and cut-down or girdled trees and crops, or burrows in pond and reservoir levees or dams. Sometimes when drain pipes in a levee or reservoir are stopped up, it may be very difficult to get the sticks, logs, and debris removed so that the water will move out and beaver can be trapped. In large watersheds, it may be difficult to locate bank dens; however, the limbs, cuttings and debris around such areas as well as dams along tributaries usually help pinpoint the area.

In some drainage systems, total elimination of foods, e.g., aquatic vegetation and trees adjacent to the drainage system will, where feasible, usually prevent colonization; however, this destroys habitat for other species as well. Continual destruction of dams, especially where construction materials are scarce, will sometimes cause abandonment of the general area. Nevertheless, personal observations have included dams constructed entirely of mud and crop materials, e.g., soybean plants, corn stalks, watermelon vines, cane, grasses, rice, wheat and others, plus native plant materials, aside from trees, e.g., vines, water lilies, cattails, ragweed, pigweed, coffeebean, and others.

The beaver is adaptable and will use whatever materials are available to construct dams, e.g., fencing materials, bridge planking, crossties, rocks, wire, and other metal, wood and fiber materials. Therefore, about the only available aquatic habitat the beaver avoids are those systems lacking acceptable food, lodge or denning sites and where no suitable site to construct a dam exists.

BEAVER CONTROL AND DAMAGE PREVENTION

Damage caused by beaver can, in some cases, be prevented through exclusion, fencing, mechanical barriers or construction of structural barriers or devices which prevent beaver from controlling the water level, and such efforts may occasionally cause movement to other habitat. However, once beaver have become commonly abundant in a large contiguous area, periodic replacements or reinvasions of suitable habitat can be expected to occur.

Presently, there are no practical, efficacious and environmentally safe chemical toxicants, aversive agents, fumigants, or repellents which are registered or can be effectively used in controlling beaver. There have been numerous mechanical devices experimented with

to try to prevent damage or control beaver, however, except for exclusion or water control devices and the following methods, most have proven ineffective. Even attempts at biological control using alligators, chemosterilants and other means have not proven efficacious and in most cases have caused other problems. Some recent use of deer repellents have indicated promise for beaver damage prevention; however, more research in the area of repellents is needed.

SHOOTING

In some States, because of the extent of damage caused by beaver, regulations have been relaxed to allow shooting; some even allow the use of a light at night to spot and shoot beaver. Before attempting to shoot beaver, check regulations, and if applicable, secure permits and let the local enforcement officer/game warden know what is being attempted.

Beaver are most active from late afternoon to shortly after daybreak, depending on the time of the year, from beginning about 6:00 to 8:00 pm, until about 7:00 a.m., when they generally retire to the lodge or bank den for most of the day. Therefore, if night shooting is not permitted, the early evening and early morning hours are most productive. Choice of weapons depends on the range and situation. Generally speaking, the time spent trying to shoot damaging beaver would be much more productive if devoted to trapping. Rarely can one eliminate damaging beaver by shooting alone.

OTHER METHODS

Because of the frustration and damage beaver have caused landowners, almost every kind of method for control imaginable has been tried, from dynamiting lodges during mid-day, to using snag-type fish hooks in front of dams, road culverts and drain pipes. Such methods rarely solve a damage problem although they may kill a few beaver and non-target species and cause severe headaches for those who are not killed. One method used occasionally along streams prone to flooding is shooting beaver that have been flooded out of lodges and bank dens. However, like other methods mentioned, these are often dangerous and rarely solve a damage problem.

TRAPPING

There are a variety of trapping methods and different types of traps that are effective for beaver. Different types of traps and trapping methods work better in some situations than others. The use of traps in most situations where beaver are causing damage is the most effective, practical and environmentally safe method of control. The effectiveness of any type of trap for beaver control is dependent on the trapper's knowledge of beaver habits, including food preferences, ability to read beaver signs, use of the proper trap to fit the situation, and trap placement. Obviously, in an area where beaver are common and have not been exposed to trapping, one can expect good success, and additional expertise and improved techniques will be gained through experience.

In some States where beaver have become serious economic pests, special regulations/exemptions have been passed to allow for increased control efforts. For example, some allow trapping of beaver throughout the year as well as use of snares and other methods of beaver control. However, other States prohibit trapping except during the established fur trapping seasons. Others have allowed exemptions for removal of beaver only on lands owned or controlled by landowners who are suffering losses. Still others require a special permit from the State Fish and Wildlife Agency, and individual State regulations must be reviewed annually to determine trapping legality.

Of the variety of traps commonly allowed for use in beaver control, the Conibear type, size 330, is one of the most effective for most situations. Not all trappers will agree that this type trap is most effective, but it is the type most commonly used by professional trappers and fur trappers who are trapping principally for beaver. This trap causes death of a trapped beaver almost instantly. When properly set, this type trap prevents any escape by a beaver regardless of size. Designed primarily for water use, it is equally effective in deep and shallow water. Because of its size, effectiveness, mobility (no need for additional apparatus to drown the beaver), and its capability to kill the beaver swiftly, traps can be set quickly. Only one trap per site is generally necessary, thus reducing the need for extra traps. It exerts tremendous pressure and impact when tripped, therefore, appropriate care, as with most traps, must be exercised when setting and during trap placement.

Double spring leg-hold traps have been used for hundreds of years and are still very effective when properly used by skilled trappers. Trap size of double (long) spring or coil spring type leg-hold traps for beaver should be at least no. 3 or equivalent size jaw spread and strength. Any leg-hold trap should be used with a drown set attachment, whereby as the traps are tripped, the beaver will head for the water and the trapped beaver is held underwater where it ultimately is drowned. Some trappers stake the wire in deep water to accomplish the drowning. If leg-hold traps are not used in a manner to accomplish drowning, there is a good likelihood that legs or toes will be twisted off or pulled loose leaving a trap-wise beaver.

Although there are other types of traps which can be used, e.g., the suitcase style (Bailey and Hancock), the leg-hold and Conibear types are most commonly used. The suitcase types are primarily used when live-trapping of beaver is essential, but are difficult to transport and can be dangerous.

TRAP SETS

There are many sets that can be made with these traps, depending on the situation, e.g., dam sets, slide sets, lodge sets, bank den sets, "run"/trail sets, under

log/dive sets, pole sets, sets under the ice, deep water sets, drain pipe sets, and others depending on the trapper's capability and ingenuity. However, in many beaver ponds, most beaver can be trapped using dam sets, lodge or bank den sets, sets in "runs"/trails, dive sets or sets in slides entering the water from places beaver are feeding. Although there is some disagreement between trappers and among researchers on whether beaver swim mostly at the surface or along the bottom of ponds, in most cases it depends on the habitat. In shallow ponds, they obviously swim extensively along the bottom scouring out runs or trails which they habitually use in traveling from lodge or den to the dam or to feeding areas much like cow trails in a pasture. Where these "runs" can be found, they are sure sets for the Conibear type of trap if placed directly across the path of the run and on the bottom.

One of the things about beaver you can depend on is that if you tear a hole in a beaver dam and get the water moving out of a pond, you will stimulate beaver movement that night. Timing is also important if you plan to make dam sets. Tearing a hole in the dam or dams about 18" to two feet wide and two to three feet below the water level on the upper side of the dam about mid-morning will generally move a good bit of water out of the pond before evening. This is the prime time to set traps because if you set in front of the dam opening in the morning as soon as a hole is dug out, two problems can arise: (1) by late evening when beaver become active the trap may be out of the water, thus generally ineffective; or (2) a stick, branch or other debris in the moving water may trip the trap, again rendering it ineffective. Ideally, you should tear out the holes in a dam in the morning, let the water flow out until mid-afternoon, then set traps until early evening.

The best dam sets are made some 12" to 18" in front of the dam itself and using stakes on either side of the trap inside the spring arms will help make the beaver go where you want it to – into the jaws of the trap. Generally speaking, it is always best to set the trigger on the Conibear type trap in the first notch which helps prevent debris from tripping it before the beaver swims into it. The two heavy guage wire trippers can be bent outward and the trigger can be set away from the middle if necessary, to avoid debris tripping it or to suit the trapper's approximation of beaver size. If signs indicate muskrats, small beaver or possibly fish or turtles moving through the trap, this technique sometimes prevents premature trap spring. As with control of any damaging vertebrate species, beaver control is not easy, nor inexpensive. Snares are best used in dive sets and slide sets where legal, however, they can also be used in other sets. Snares generally take more time and are more costly to use than the Conibear type traps, but can be useful in certain situations.

Beaver damage can be severe and cause extensive economic losses and frustration in many situations. However, the efforts necessary to effect control of beaver causing the damage is most often overestimated. Beaver colonies have a tendency like other wildlife species to build up the population to a certain level, then part of the population moves into other suitable habitat of nearby water sources.

Most landowners with beaver problems grossly overestimate the number of beaver in a pond, the difficulty of control and are generally reluctant to personally attempt trapping them out. Unless they are knowledgeable trappers or can obtain educational or technical assistance, they rarely know what to do. Most would prefer having someone else do the job for them. Beaver trapping is hard, dirty work, but anyone with reasonable strength, some outdoor savvy and persistence and who is willing to learn, can become an effective beaver trapper, if properly taught. Where legal to trap in lodges and bank dens, a good trapper can trap every beaver out of a pond if dams are kept broken and the water is kept moving out on a nightly basis. Obviously, in a large watershed with several colonies and ponds, more trapping effort will be required.

For more information on control of beaver damage, see the Great Plains Handbook "Prevention and Control of Wildlife Damage" (Timm 1983) and the various publications listed in the "Bibliography of Cooperative Extension Service Literature of Wildlife, Fish and Forest Resources" (Ruff 1982).

ECONOMICS OF DAMAGE AND CONTROL

The economics of beaver damage is somewhat dependent on the extent of damage that has occurred before the landowner or manager realizes that a problem exists, and begins to attempt control. Some beaver damage problems are intensive, e.g., one or two beaver in a new pond caused by their damming or stopping up a culvert or drain pipe, flooding roads or crops, others are extensive, e.g., several beaver colonies in a flatland area where several hundreds of acres of merchantable timber are flooded and will die unless the water is removed quickly. Generally speaking, a knowledgeable trapper, if the culvert or drain pipe can be unstopped, can trap one or two beavers in a night or two and eliminate further damage in the intensive damage situation. However, in the extensive situation, it may require a concentrated effort with several trappers dynamiting or pulling dams and a month or more of extensive trapping to get the water off the timber and reduce further timber losses.

The economics of each situation are obvious. Economically, one must weigh the tradeoffs, hundreds of thousands of board feet of timber, and years of regeneration losses versus the cost of traps, time and effort or contractual arrangements with a damage contractor, for the worst case. For the least case, a couple of nights trapping effort and a half-day of labor to clean the culvert versus the cost of rebuilding a washed-out road or loss of some flooded crops or timber.

The most important point is that as soon as it is evident that a beaver problem exists or appears likely to develop, and the sooner control efforts are employed,

the less damage will be experienced. Once beaver colonies become well established over a large contiguous area, the more difficult and costly achieving control will be.

One of the most difficult situations is where a landowner adjacent to one who needs to control beaver will not allow beaver on their place to be controlled. In this situation, one can expect periodic reinvasions of beaver, and beaver damage. There are, of course, exceptions, but most landowners with beaver problems can prevent or control damage if they will purchase some traps, learn about beaver behavior, how to effectively set traps, and periodically trap out reinvading beaver.

Beaver damage nationwide has been estimated at from $75 to over $100 million per year. In the southeastern States alone, the figure is probably close to $50 million annually. This would include damage to crops, forests, roads, pastures, and other rural and urban properties, to commercial timber company lands, and to public lands.

LEGAL STATUS

The legal status of beaver varies from State to State and in some States the beaver is protected except during furbearer seasons. In others, it is classified as a pest and may be taken year-round when causing damage. Because of its fur value, water conserving, and dam building, it is generally not considered a pest until property damage, flooding and/or other economic losses become extensive. Fur prices for beaver, particularly in southern States, make it hardly worth skinning and stretching. In some northern States, trapping is prohibited near lodges or bank dens to protect and perpetuate beaver colonies, however, prices for beaver pelts are substantially higher in these areas. Before attempting to trap or otherwise take beaver in any State, always check the existing regulations.

CONCLUSIONS

I. Control of serious beaver damage can be achieved on private lands through:

1. Elimination of all beaver by trapping and dam removal.

A. This is best achieved by the landowner or his employee with their own traps so that reinvading beaver can be caught quickly. Efforts should be concentrated when several successive days' trapping efforts can be made and particularly during the winter months prior to or during the breeding season. After beaver are removed, dams and construction materials used in the dam should be removed.

B. Can be achieved by State or Federal "operational control" trapping if sufficient State or Federal agency trappers are available to service needy landowners/managers.

C. Where adequate incentives are available (landowner pays plus trapper sells pelt and/or carcasses) local trapping organization trappers will sometimes help reduce beaver populations. Occasional problems arise here, e.g., most trappers will only trap during furbearer season, they rarely want to remove all the beaver (so as to leave some for seed stock), they most often are reluctant to remove dams and reduce flooding, and quite often they will only trap beaver if they can also trap for muskrats, raccoon, mink, fox and other species while on the owner's land. The value of the different species pelts plus difficulty of trapping and skinning should indicate which species will be most diligently pursued. Control of damaging beaver can be accomplished through this means but is rarely satisfactorily done and often more problems arise than are solved where this is the only effort advocated.

2. Population reduction, particularly where beaver have not been trapped before. Some level of population reduction can be achieved by fur trappers, however, unless there is some strong incentive provided, rarely does a fur trapper want to work hard enough to trap the last beaver out of an area. The "cherry" beaver will generally be trapped out and the difficult ones left for seed. If one wants to manage beaver, this is probably a reasonable and easy way to proceed. However, this will not control serious beaver problems (where damage is extensive) for very long.

3. Development of a strong monetary or other incentive, especially where competition is great could potentially cause beaver to be actively pursued by trappers as occurred in the past. Say, for example, if beaver pelt prices were worth a minimum of $50.00 per pelt. Although I'd like to see much higher prices for beaver, it is not very likely in the southeastern United States where the most serious problems are occurring, and where beaver populations continue to increase.

II. Should a landowner consider managing beaver or should control be the objective?

1. This question is one that wildlife managers are often confronted with and like most questions of its type, it must be answered on a site-by-site basis with the landowner's objectives in mind.

2. Dependent on the landowner's objectives in high value cropland, particularly in relatively flat terrain, the correct answer in most cases is control. In highly productive and valuable timber-growing areas, in most cases the correct answer is control. In high property value urban/suburban areas, the correct answer is control (if allowed). And in situations where beaver present threats to human health (Giardiasis), beaver must be controlled.

3. Again, dependent on the landowner's objectives, in wetland areas where serious flooding is not a problem, beaver should be managed. Beaver should also be managed in areas where the timber

value is low and waterfowl habitat is limited. Beaver should be managed where pelt prices for stretched and scraped pelts are at a minimum of $25.00 each. Beaver should also be managed if the ponds and beaver are causing no damage to the landowner or to adjacent lands. There are numerous beaver ponds in mountain areas as well as in wetland areas where no serious damage occurs. In some States in the south, valuable green-tree waterfowl hunting areas leasing for $40,000 per year have been completely ruined by beaver.

4. One of the serious problems in the southeastern U.S. is that some of the most extensive damage caused by beaver is in valuable bottomland hardwoods along creek and river drainages already subject to periodic flooding. Thousands and thousands of acres of valuable timber and wildlife habitat for upland species is damaged because of beaver in these areas as well as damage to adjacent lands used for other purposes. Serious damage also occurs to uplands managed for valuable softwoods due to flooding, cutting and girdling of trees.

5. On my own property in rolling hill country in North Alabama, we manage beaver by periodically eliminating the local population and their dams on the two creeks. Reinvasion usually occurs in from one month to a year and the dams are rebuilt. My objective is to prevent serious damage to my timber or crops while maintaining suitable habitat for wood ducks, fish and furbearers. However, this property is not in a flatland area and extensive flooding is not a problem. If it was in a flatland area subject to serious flooding or timber damage, we would maintain constant control. However, by trying to enhance wildlife values, we have lost most of the large and small sweetgums on the property to cutting or girdling by beaver.

III. The old bounty question always comes up – will providing a bounty on beaver help achieve control? In most cases covering a large geographical area, NO, with a few exceptions.

1. Reasons why it rarely works are simple: (a) bounty trappers are not stupid, why work your buns off to trap beaver in an area where they are scarce and hard to get to when you can made more money where they are plentiful – and access is easy on the neighbor's land, the next county, in a neighboring State; (b) why eliminate the last beaver in an area or kill the goose that lays the golden egg; (c) if bounty trapping is to be effective in an area, it must be done early when there are few beavers in a small area and the incentive is high.

2. The exception, following point (c) above, is where the landowner/manager has a confined population and provides a high incentive to an employee or his kids (if they can be controlled) to trap only on his land and he provides an attractive bonus for completion of control measures, e.g., dams destroyed and beaver eliminated.

IV. Mistakes commonly made in beaver control programs (attempts) in working with private landowners.

1. Encouraging landowners to believe or think that beaver control is easy and that someone else will do it for them, e.g., reintroduction of alligators, chemosterilants, anticipated high pelt prices, or waiting because someone heard of some new and easy techniques being developed elsewhere.

2. Not clearly explaining up front that the landowner's objectives should determine whether they want to manage or control beaver.

3. Leading them to believe that local trappers will take care of their problem unless beaver pelts are worth a minimum of $25.00 or they can be sold for at least $10.00 in the round. If you have ever carried a night's catch of 8 or 10 beaver averaging 40 pounds each a mile or more out of a flooded creek bottom, spent a half-day skinning, and then only receive $5-$8 per pelt for your efforts, you'll recognize that the return is simply not worth the investment.

4. That because beaver provide waterfowl and furbearer habitat that a landowner should manage beaver for the good of wildlife, not control them. This is a simplistic and enhancement approach, but not practical for landowners with serious damage, and rarely improves your credibility with a frustrated landowner.

5. Not explaining right up front that depending on someone else will rarely get the job done and that the best way to achieve and maintain beaver control is through hard work and diligent trapping by the landowner or their employees, followed by periodically maintaining control of reinvading beaver by trapping them as fast as they move in.

6. Not briefly explaining in clear terms what beaver populations dynamics are, that over time more damage may occur, and why most people think they have more beaver in a pond than they really have.

7. By leaving doubt that beaver trapping is the only legitimate and effective control measure available, that beaver trapping is so difficult that only very experienced trappers can catch beaver, and that other measures such as shooting, dynamiting or other means such as reintroduction of alligators rather than diligent trapping will control beaver. For example, a biologist (from an anonymous agency) was quoted a few months ago in a Washington, D.C. newspaper as telling a reporter concerning an urban area where beaver dam flooding was threatening $200,000 homes that "beaver were so intelligent and difficult to trap that trapping was not an effective means to solve the problem." The recommended action was

to have a dragline come in to remove the dams. This was done at great expense and less than a year later the dams have been rebuilt a little further downstream and flooding and shade tree girdling continues to be a problem.

I suggest that those of us who are wildlife biologists and natural resources managers should put ourselves in the landowner's shoes and instead of just advocating wildlife enhancement for all species, consider the landowner's objectives. Quite often, by helping landowner's learn to control beaver (or other problem wildlife species) you can concurrently encourage them to improve habitat for other species in line with their objectives. Good natural resources stewardship may not be beaver management, it may instead require beaver control.

Although not covered in this paper, there are a number of benefits that can be credited to beaver and beaver ponds aside from the values of creating fish, waterfowl, furbearer, shorebird, reptile and amphibian habitat. The beaver in many areas is an important fur resource, and for those who have not yet tried it, beaver meat is excellent table fare if properly prepared. There are recipes for preparation and cooking beaver in a number of publications. If one is trapping beaver, the meat is a valuable resource and can be utilized whether the pelts are worth skinning or not.

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